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Telephony

The Journal of the Telephone Industry

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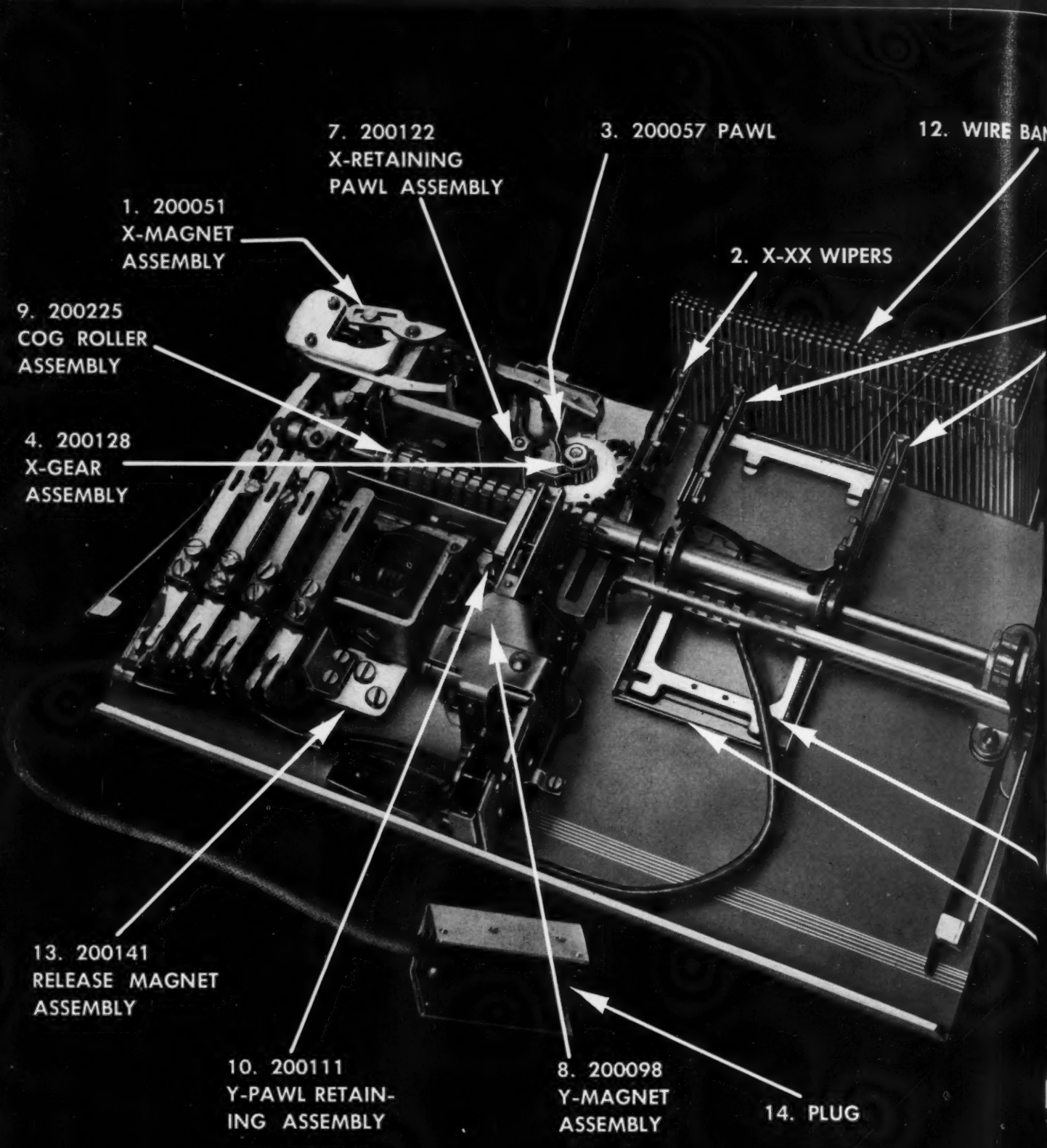

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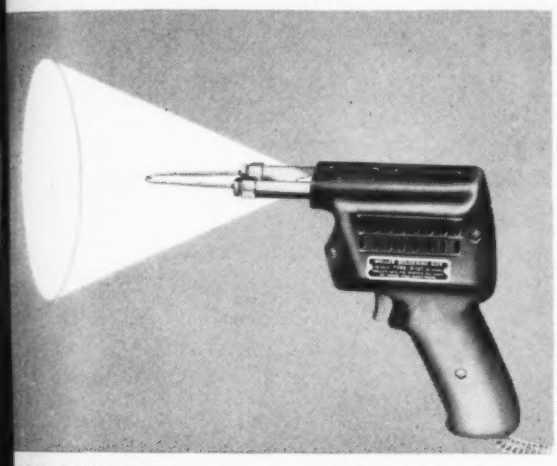

ldering's Simpler, easier and faster—with the new WELLER MFG. CO. Solderlite Soldering Gun! Press trigger, and tip heats in 5 seconds. Bulb lights work; Flexi-tip loop reaches between wires easily. In two models: S-107 Single-heat for light duty, and D-207 Dual-heat for chassis soldering.

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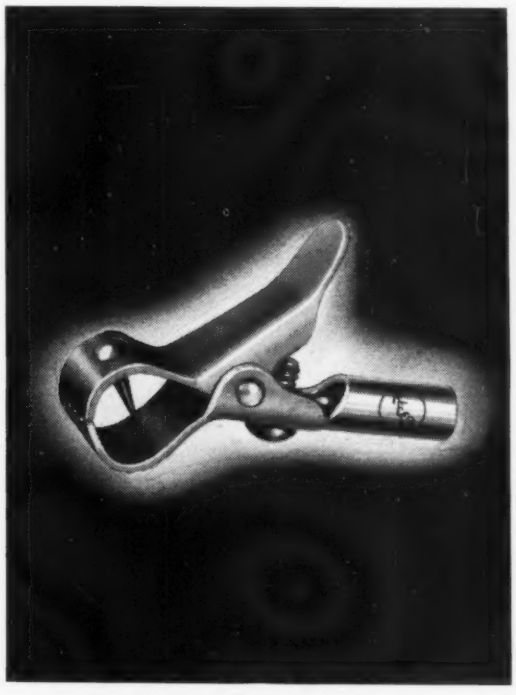

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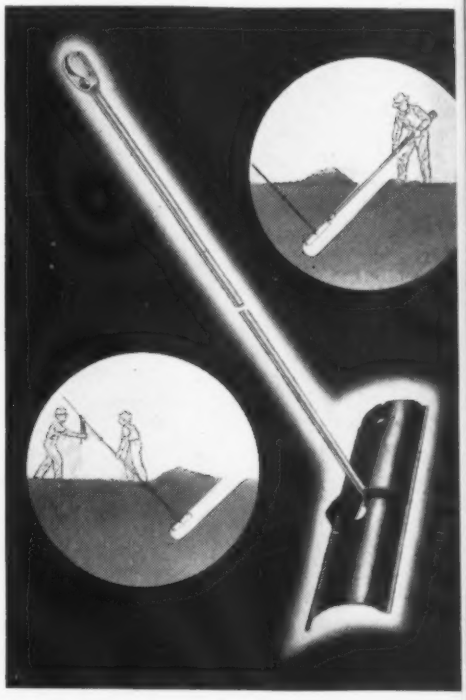

Poles Stay Put! A. B. CHANCE Never-Creep Anchors are ideal for normal guying, for they pull against solid earth. 5 easy steps install these Anchors: (1) Bore hole, (2) Drive rod, (3) Hang "Never-Creep" plate, (4) Tighten guy, (5) Fill in hole—and the job is done!

FLASHES AND PLUGS

DRASTIC MEASURES. An unhappy man in Milwaukee, Wis., was arrested one day and taken to court. He claimed he'd put one coin after another into the pay telephone and got a wrong number every time.

The judge fined him $50, but not for what he had to say about the operator. When arrested, the frustrated caller had been walking down the street with the telephone receiver dangling by the cord wrapped around his neck.

• • •

TEAMWORK SAVES A LIFE. The mobile telephone and a fast-thinking operator teamed up to save an automobile from being crushed by a locomotive recently.

When a Dunkirk, N. Y., man drove over a grade crossing shortly after midnight, his car's wheels became wedged in the tracks. A passing cab driver called his office with his mobile telephone, the taxi firm notified the New York Telephone Co.'s local office; and the switchboard operator, unable to get the railroad depot, called the yard tower. The towerman flagged a freight train before it could reach the crossing.

• • •

. . . **"NOR IRON BARS A CAGE"** . . . A 16-year-old prisoner held in an Annapolis, Md., jail, pending a juvenile court hearing, recently made a long distance telephone call a long distance run.

After asking permission to call his father at Hyattsville, he was released from the cell block to go to the telephone near the front door. While the warden's back was turned, he speeded out the door and down the street. "He was traveling," the warden exclaimed.

• • •

A BOOTH OF DISTINCTION. Passers-by at Jack Delaney's on Sheridan Square in New York City turn for a second glimpse of an old horse-drawn coach cab serving as a telephone booth. Its presence at Mr. Delaney's place of business is only one aspect of the owner's fondness for a prized possession. He formerly drove the four-horse coach on his farm in New Jersey, and it was converted to a telephone booth only after he gave up driving. The rest of the vehicle is scattered about his home.

His bed is made of a rear wheel (at the head), single trees and lead bar (at the foot) and the pole, split vertically, composes the sides. The other rear wheel has become a table. The box that was on the back of the coach is now a dresser, and the seat that was over it, a small settee.

• • •

IMITATION OF LIFE. A stranger called the Springfield office of the Ohio Bell Telephone Co. one day and excitedly told them that a telephone man had just shot a snake on a customer's back porch. Later reports had installers roaming the countryside with shotguns and linemen shooting snakes from poles. The Bell district plant people were relieved when the stories were untangled.

An Ohio Bell contractor—not one of the company's employes—had found a huge snake coiled on a porch where he stopped to rest. He called two men from a nearby garage. When they shot the vicious-looking snake it didn't die—it chipped. It was a life-sized imitation made of china.

TELEPHONY

The Journal of the Telephone Industry

August 14, 1948

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ABC of the Telephone

By FRANK E. LEE

THREE important tools used in making an analysis of relay circuit operations were discussed in the last installment of this series which appeared in the May 29 issue of TELEPHONY. These tools were:

(1) An operating sequence diagram to follow the sequence of the circuit.

(2) Schematic drawing to trace operating paths and relay contact used.

(3) Wiring plan to use in the event the trouble is caused by improperly connected wires.

To these basic tools of relay circuit analysis could be added this thought—complicated circuits, actually, are made up of a series or network of simple circuits.

At first glance, the telephone repairman with limited experience might decide a particular case of trouble or an entire circuit is beyond his ability simply because the drawings look impressive or complicated. However, after a little study and reasoning that same circuit drawing tells a story. Thus, the circuit is understood easily. This changed viewpoint is nothing more than the benefits of the learning process expressed in actual practice.

Any relay circuit could be used for the purpose of the circuit analysis that is to follow. The particular auxiliary key circuit, shown in *Fig. 1*, has been selected because of the excellent way it lends itself to demonstrate how a circuit network can be analyzed.

First of all the purpose of circuits of this type is to provide a means of answering and using two or more central office or PBX extension lines with a single subscriber telephone set. This circuit will be analyzed to demonstrate how a telephone repairman can:

(1) Break down any relay circuit into certain component parts.

(2) Make an analysis of a reported case of trouble.

PART XXXV. Analysis of Relay Circuits. The preceding article in this series appeared in the May 29 issue, p. 22.

(3) Develop tests to locate the cause of any circuit trouble.

Next of importance, the repairman should know the functions of the relay circuit. A few of the more important functions performed by the auxiliary key circuit used for this illustration are:

(1) Provide an audible and visual signal that an incoming call is waiting on the line.

(2) Answer incoming call.

(3) Originate outgoing call.

(4 Provide automatic disconnect in event incoming call is abandoned.

(5) Hold incoming or outgoing call in order that another call can be originated or answered on an associated line.

(6) Provide a visual signal that call is being held on line.

(7) Provide automatic disconnect when call is completed.

Knowing the purpose and functions of a particular circuit, the third step is to associate functions with circuit details. Using the selected circuit as an example the circuit operations caused by an incoming call are indicated in outline form in *Fig. 2*. All of the circuit details involved, such as battery and ground supply, contact closures, etc., can be traced in the schematic drawing, *Fig. 1*.

The relay operations caused by an incoming call would be described in the following manner:

(1) Ringing generator over the tip and ring of the line operates the ringing relay designated (R).

(2) Battery on a contact of the operated (R) operates the ringing auxiliary relay (RA).

(3) (RA), in turn, operates relay (C), lights the call lamp (CL), and sounds the DC buzzer.

After the (C) relay has operated the (RA) is locked to a normal contact of the (SA). As a result the (CL) lamp and buzzer operate continuously. The (R) relay will release during each silent ringing interval. However, the circuit's call circuit will provide a continuous call signal.

These circuit actions take place because certain electrical circuits are closed to connect relay windings, a lamp, or buzzer in a series circuit with battery and ground. A careful analysis of the complete circuit, shown in *Fig. 1*, will reveal that all other connecting lines lead to open relay contacts. Also, if any one of the sets of relay contacts in use during the particular function were dirty or failed to make properly a circuit fault would exist. As a result, a particular function or group of functions would be lost, and the circuit would be out of order.

As a point of fact refer to *Fig. 1* and assume the left contacts of the (RA) were dirty. The first obvious fault would be the (CL) did not light on an incoming call. Second the repairman would observe the (C) relay failed to pull up during this sequence of operations. To test for this contact failure, connect one test lead of a receiver test set to ground and with the other lead carefully touch the battery contact of the (RA). A click should be heard. If no click is heard the battery lead is open. Next, carefully touch the other spring of this operated contact. No click at this time (with a click on the first part of the test) indicates this contact is dirty or otherwise defective.

Fault locating tests of this nature are patterned closely after the tests

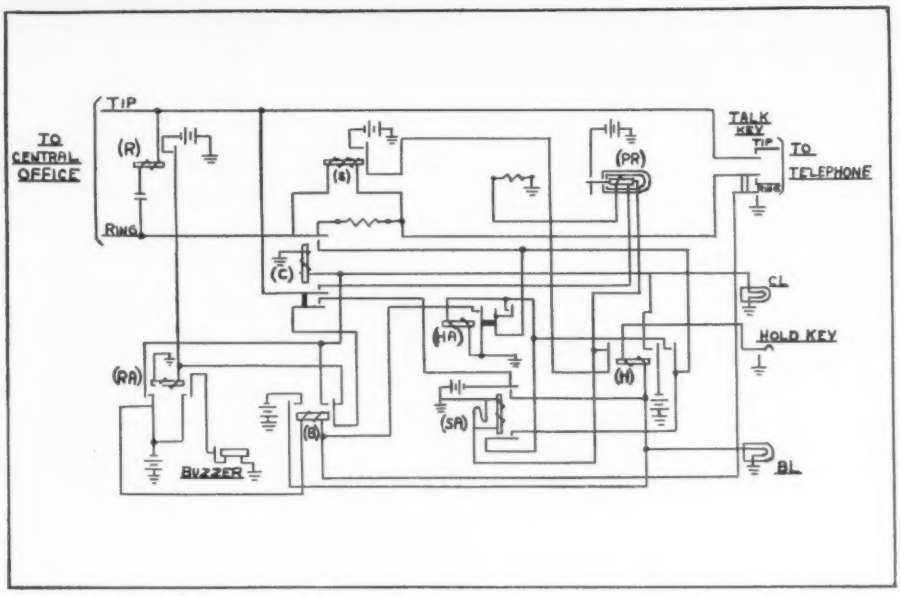

Fig. 1

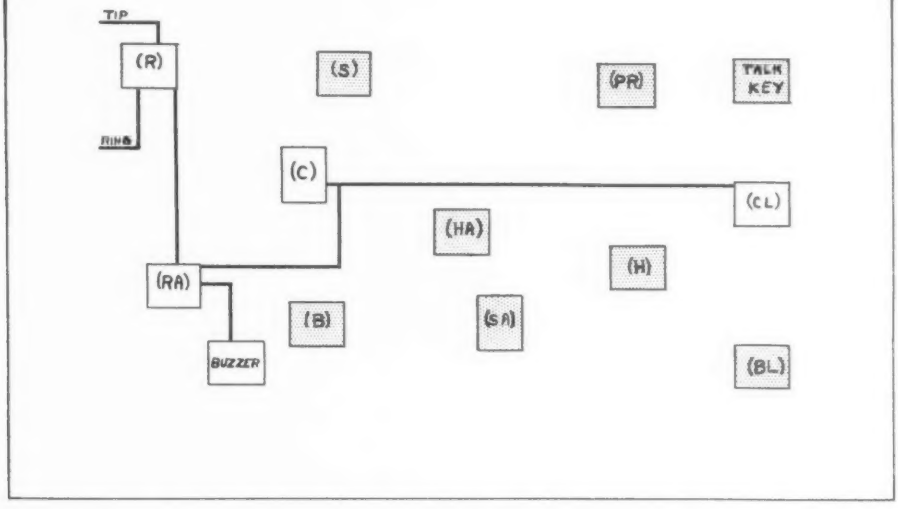

Fig. 2

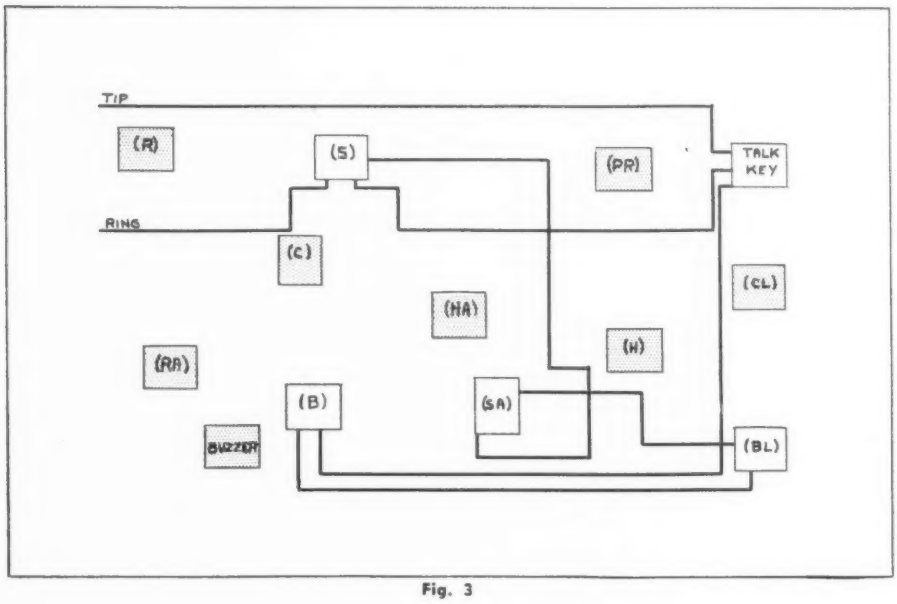

Fig. 3

developed for the subscriber's instrument circuit in Part 33 which appeared in the April 24 issue of TELEPHONY.

Continuing with the analysis of the circuit, the next function is answering of the incoming call. To perform this function the subscriber removes the handset from the switchhook and operates the talk key associated with the lighted call lamp. The result of the associated circuit action is shown in outline form in *Fig. 3*. Again, all details involved can be traced in *Fig. 1*.

The transmitter short across the central office line through the winding of the (S) or supervisory relay causes the (S) relay to operate. Also, the transmitter short operates a relay circuit in the central office which trips the ringing generator clearing the line for voice transmission. The operated (S), in turn, operates the supervisory auxiliary relay (SA).

Generally, auxiliary relays are used when the original function relay must be extremely sensitive and more than one set of contacts must be closed, opened, or a combination of both. The essence of this arrangement results in more reliable circuit control or supervision.

The (SA) operated opens the holding path of the (RA) relay which releases. Also, the (SA) operates the BL lamp. When the (RA) relay releases the buzzer circuit is opened, the operating path of relay (C) is opened, and the CL lamp is extinguished. Also, the release of the (RA) relay closes battery through the winding of the (B) relay to ground at the operated talk key operating relay (B). Relay (B) operated also provides a circuit to light the BL lamp to indicate the circuit is in use. The normal (C) relay closes a low resistance shunt across the winding of the (S) relay which materially improves transmission of the circuit.

Digressing from the original list of functions in order that the continuity of the circuit can be followed the next function, illustrated in outline form in *Fig. 4*, is holding a call in order that another call can be answered or originated from an associated auxiliary key circuit.

When the hold key is operated these circuit actions occur:

(1) The (H) relay is operated by battery supplied by the operated contacts of the (B) or (SA) relays.

(2) The operated (H) lights the CL lamp. As a result lighted CL and BL lamps indicate a call is being held by the circuit.

(3) Also, in operating, the (H) relay reoperates the (C) relay and releases the (SA) relay.

(4) (C) relay in operating closes the ring of the line by means of an operated contact of the (H) relay through the winding of the (HA) relay to ground operating the (HA). NOTE: Central office battery on the ring.

(5) The (HA) operated locks through its own operated contact and, thus, the line is held by the central office battery on the ring through the winding of the (HA) to ground. The (HA) winding provides sufficient resistance to hold the circuit in much the same manner as central office supervision is held by the transmitter short.

(6) The (B) is held operated by a second set of (HA) contacts which will keep the BL lamp lighted when the talk key is restored to normal.

(7) With the talk key normal the transmitter short is removed and the (S) relay releases. The (SA) already has been released by the operated (H) therefore no function is performed as the (S) releases.

While the call on this particular line is being held the subscriber can answer or originate another call on an associated auxiliary key circuit.

In the following step assume the subscriber restores the hold key to normal. The following circuit action takes place and can be traced in *Fig. 1.*

(1) (H) relay releases.
(2) (C) relay is held operated by a contact of the operated (B), and operated contact of the (C) to a normal contact of the (SA).
(3) The (HA) relay still is held operated through the operated (C) relay.
(4) In turn the (B) is held through the operated (HA).

Next, the talk key is operated and these actions occur:

(1) (S) relay reoperates.
(2) In turn, the (SA) operates and opens the CL lamp circuit.
(3) With (H) relay normal and (SA) operated the (C) relay releases.
(4) Normal (C) opens the holding path of the (HA) and the holding feature has been removed.

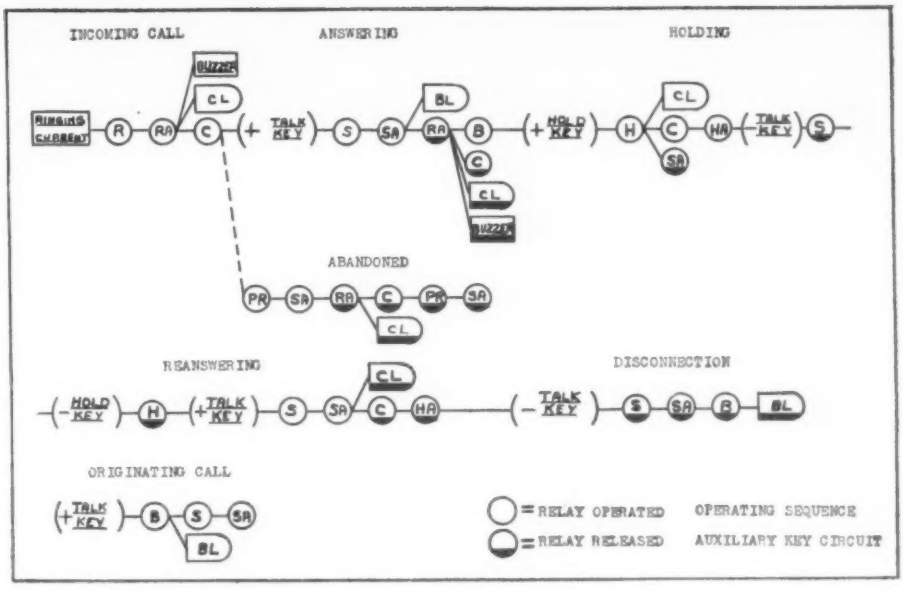

Fig. 5

Upon completion of the call the talk key is restored to normal and these actions take place:

(1) (S) releases.
(2) (SA) releases.
(3) (B) releases.
(4) BL lamp extinguished and the circuit is in a position to receive or originate another call.

Wipe-out Feature

This particular circuit provides a wipe-out feature which functions in the event an incoming call is abandoned before it is answered on the auxiliary key circuit. A feature of this nature is required to restore the equipment to normal when the line is seized by an incoming call and the circuit is unattended. As discussed previously, under these conditions the (RA) is held operated to provide a continuous call signal.

The wipe-out feature is provided through the use of a polarized relay (PR) and a reverse battery and ground on the central office line circuit. With the line normal, battery appears on the tip of the line and ground on the ring. With the plug of an answering cord in the answering jack, battery is supplied over the ring and ground over the tip.

The conditions which must exist before the wipe-out feature is used are:

(1) An incoming call is set up over the line and the circuit functions as discussed in the manuscript associated with *Fig.2.*
(2) The call, being unanswered, is abandoned.
(3) The central office operator disconnects; battery appears on the tip of the line; and these circuit actions take place:
(A) Relay (PR) is operated through a contact on relay (C).
(B) Relay (PR) operates relay (SA).
(C) Operation of (SA) opens the holding path of relay (RA).
(D) (RA) relay releases and opens the operating path of CL lamp, buzzer, and relay (C).
(E) Operation of relay (C) opens the operating path of relay (PR).
(F) Relay (PR) releases and in turn opens the operating path of relay (SA).

Thus the circuit is restored to normal and once again is in a position to handle incoming or outgoing traffic.

A circuit of this nature could be designed with a wipeout feature that utilizes a slow operating dash pot type relay. The dash pot type relay is slow operating by virtue of a piston that is drawn up through a cylinder filled with oil. The essence of this type of circuit is:

(1) At the completion of each ringing interval (R) relay releases and the slow operating cut off relay is ener-

(Please turn to page 36)

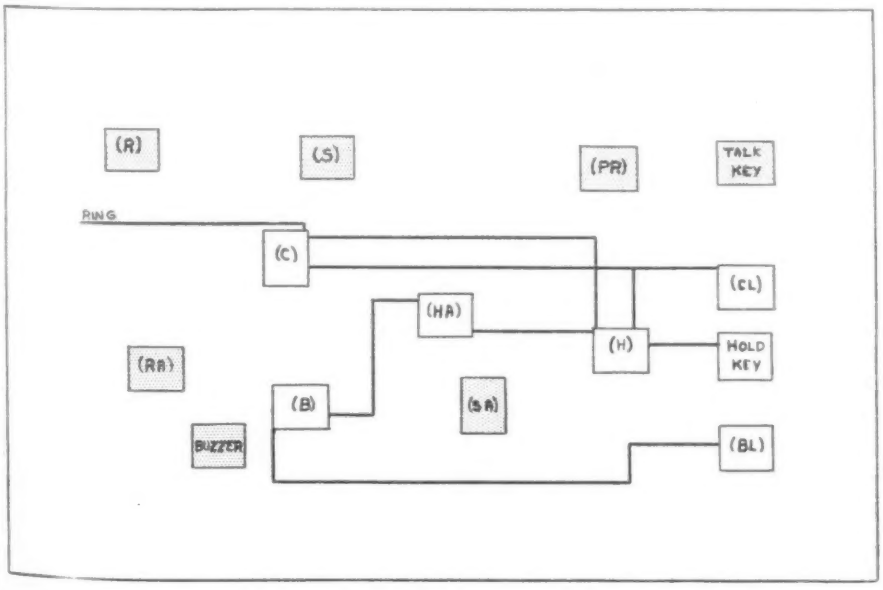

Fig. 4

IN THE NATION'S CAPITAL

BY
FRANCIS X. WELCH
WASHINGTON
EDITOR

Passage of excess profits tax law would work hardship on telephone and other utilities. Coining of seven-cent coin might not be desirable in telephone industry.

WELL, the special session has come and gone and, as far as enacting laws of any application to the telephone industry, it might just as well never have happened. This was generally expected, of course, since both parties now tacitly agree that the whole thing was a political maneuver designed to put the GOP Congress on the spot. Whether it did or not remains to be seen.

But one of the bills which President Truman unsuccessfully sought to have passed is worthy of some passing notice because of the danger that it may be revived in the next Congress to the detriment of all industries, including the telephone industry. That was the President's proposal to re-enact the excess profits tax. The superficial reasoning behind this proposal is that a curb on corporate returns, in the form of an excess profits tax, would be an incentive to reduce prices. In other words —so runs the theory—corporate management would say to itself "why not give the money back to our own customers in the form of price reductions instead of giving it to Uncle Sam in the form of taxes—since we cannot keep it for the stockholders anyhow?"

It is a very pretty theory and one that is assiduously cultivated by some labor leaders who see in it an additional incentive for corporate management to "split the take" with the employes (in the form of wage increases) rather than see the profits run into brackets high enough to become liable for the stiff excess profits tax. Unfortunately it doesn't work out that way. It would work out, to some extent, in such a way as to aggravate rather than relieve the inflationary pressure.

For the telephone industry, faced with the problem of new construction and new financing for plant expansion, revival of the excess profits tax at this time could be disastrous. It could mean a virtual blockade against the investor who might otherwise be disposed to take his chances on the industry's future by financing its present plant investment needs.

Back in 1945, just after the end of the war, the then Secretary of the Treasury, Fred M. Vinson, asked for the prompt repeal of the excess profits tax. He called it "too erratic a tax engine to turn loose for even one full year of the postwar period." The then Democratic 79th Congress paid heed to Vinson's words and repealed the tax, and President Truman approved.

An important distinction commonly overlooked by those who would revive the excess profits tax, is this: Whereas wartime conditions might justify such a tax *precisely because it does discourage unnecessary production and industrial expansion*, postwar consumer demands require that industrial production and plant expansion be *encouraged and increased to the fullest extent possible.*

Stated another way, efforts were made during the war to concentrate industrial operations on war production alone, discouraging (by means of the excess profits tax) any easy profits which industry might be tempted to take through the exploitation of the hungry demand for consumer goods and services. But as soon as the war ended, inflation got its start because industrial production could not keep pace with consumer demand. There was, therefore, every reason to step up such production as a means of controlling inflation. This situation required that all brakes be removed from the industrial machine, including the excess profits tax. It is safe to say that the speed with which the nation was able to "reconvert," and the present record high pitch of industrial activity, were aided greatly by the repeal of the excess profits tax.

Another reason why the revival of the excess profits tax would encourage rather than curb inflation, is the fact that a great share of corporate earnings would go into salaries and other mass buying stimulation. Thus, on one hand, the investor would be discouraged from financing industrial expansion so as to produce more goods; on the other hand, mass purchasing power would be increased to compete for the limited volume of goods produced. More money in the hands of the consumer, to buy less goods to be consumed—that is certainly a good way to keep the inflationary balloon shooting up.

There might be some social justification for revival of the excess profits tax if current profits were unscrupulously excessive. But in no major industrial branch of our economy is there any evidence of profiteering. Certainly not in the telephone business as the evidence in recent Bell and Independent rate cases eloquently testify. A typical example was the evidence recently placed before the Kentucky Public Service Commission by the Southern Bell Telephone & Telegraph Co. (seeking a 12 per cent rate increase) to the effect that the company is making only 2.9 per cent return on its Kentucky business. Even in the case of the oil production industry, where postwar profits have been admittedly high, the demand for intensive and expensive investment in new equipment, so as to make more economical exploitation of petroleum reserves possible, will very quickly siphon off the surplus revenues.

Taking the nation's economy as a whole, the Department of Commerce, under one of President Truman's own cabinet officers, stated that after allowances for investor valuation adjustment, 1947 corporate profits before taxes "represented about the same proportion of total income originating in corporate business as they did in 1929, and were below the comparable wartime peak." During the year 1948, so far, average profit levels for all business are estimated to be slightly above 1947, but below the last quarter of 1947.

Former chairman of the Federal Re-

serve Board, Marriner Eccles, was one of the few top men in the Truman administration who opposed repeal of the excess profits tax in 1945. He then thought it was a little premature. What does Marriner Eccles think today? He is opposed to President Truman's request that the tax be reimposed.

The patent need of the telephone industry and other utility industries for "new money" to finance needed expansion must be protected. The recent volatile stock markets already betray the jittery attitude of investors who are nervous about inflation and international complications. Placing arbitrary restrictions on future expectations of profits through the imposition of an excess profits tax might well be the last straw in collapsing the utility industries' program for future financing.

It must be recalled that corporate profits have so far been used largely to build up inventory to finance improvements and extensions. The record of the telephone industry in striving to catch up with the backlog of telephone installation applications, including rural telephone extensions, would have been seriously crippled if the excess profits tax had not been removed after the war. Certainly there is no sound reason for imposing any new breaks at this time.

Another thing to be kept in mind is the fact that depreciation, deferred maintenance, and even obsolescence goes on at a higher rate when plant capacity is being overworked or overloaded. Some day, in the not too far distant future, such plant will have to be replaced at inflated prices and the industry will have to raise money for such replacement. Surely, skinning the corporate profits for reserve, and shooing away new investors, would be a poor way for the government to cooperate.

• • •

Telephone men will doubtless greet with mixed reaction the latest effort in Congress for action on a bill for coining a new seven-cent piece. A bill on the subject was introduced at the special session by Rep. John McCormack (D., Mass.), minority leader in the House. Although it was generally understood that it did not stand the slightest chance of enactment at the special session, McCormack's bill is understood to have strong backing on the other side of the political aisle.

The most significant support came from McCormack's Massachusetts colleague of different political faith, Rep. Joe Martin who also happens to be Speaker of the House. Speaker Martin said he favored the proposal, "I knew about it before it was introduced and will do all I can for it at the next session in January."

He went on to say that there is nothing sacred in the present order of coins and that he agreed with Representative McCormack that having a new coin, in between the nickel and the dime, would be a saving to consumers. This is Representative McCormack's principal argument. He says makers and merchandisers of numerous everyday items could meet increased costs under inflation by pricing them at seven cents instead of raising them to a dime as they are now doing.

Both representatives pointed out that the United States has had a number of small coins in the past which aren't in use today. Some of them were a silver 20-cent piece, a silver five-cent piece, a silver three-cent piece, and a three-cent piece of copper alloy, a bronze two-cent piece and a copper half-cent.

As an example of how a new coin between the nickel and the dime could have saved the public money, Representative McCormack cited the New York subway fare issue. For years, the subway system lost money on the nickel fare. Eventually it had to go up, and the only place it could go to without the use of tokens, was the dime.

"If there had been a seven-cent coin, New York's subways might not have fallen into such a condition that they needed a dime fare to cover deferred improvement costs, and maybe subway riders today would be paying seven cents instead of a dime," McCormack said. Another idea, without official backing, broached in Washington would be for a 15-cent coin to replace the dime, and a coin of half that value, or 7½ cents, to take the place of the nickel.

A seven-cent piece, if it should materialize, probably would produce more headaches than benefits for the telephone industry. It would probably require either the installation of an entirely new deposit slot in the pay station apparatus, or else the substitution of a seven-cent slot for the present five-cent slot. In the latter case, of course, there would be the offsetting advantages of increased revenue which would result from the public dropping seven cents in the same slot where a nickel used to go. However, that would entail rate case applications in 40 odd states and perhaps as well as approval of the FCC with respect to toll calls. Furthermore the injection of the odd digit would probably cause some accounting headaches in view of the fact that the present pay station rate system is based on multiples of five cents.

One thing is certain, if the industry's pay station equipment has to be reconditioned in order to install a new deposit chute (in addition to the nickel chute which would be retained) it would be one of the most expensive monetary changes Congress ever enacted as far as the telephone industry is concerned. Other automotive vending equipment interests do not have such a problem. Automats, cafeterias, transit companies, cigarette vendors, and even pin ball machine manufacturers would stand to gain some benefits through increased revenues (after adjusting equipment to take the new piece *instead* of the nickel.)

And what would the new seven-cent piece be called? It would have to have a popular name, just as the five-cent piece is known as a nickel and the 10-cent piece is known as a dime. It is

(Please turn to page 37)

WANTED: Several Thousand Miles of Cable

There is a large unsatisfied demand in the telephone industry for paper insulated, lead encased cable, with indications that it will be unfilled for some time. During the war the excess of demand over supply for this important component part of telephone plant equipment was understandable. Everyone thought that within a reasonable time after hostilities ceased production would catch up. However, more than three years have elapsed and yet the situation is unchanged: Delivery is still six months to two years late, depending upon the size of the order.

It is becoming increasingly evident that many telephone operating companies that never before bought cable are now preferring this type of construction. This, coupled with the long period of unsatisfied demand, has built up a big backlog of orders for lead covered cable.

One of the telephone equipment manufacturers has recently completed a survey of the requirements of Independent telephone operating companies for cable in relation to present manufacturing capacity. The results point emphatically to a continued shortage of cable unless manufacturing facilities are increased.

THE PLANT MAN'S NOTE BOOK

BY
RAY BLAIN
TECHNICAL
EDITOR

WE ARE in receipt of a letter from Fred S. Florance, general manager, Highland Telephone Co., Monroe, N. Y., wherein he refers to an item which appeared on this page in the July 10th issue regarding the construction of a peaked roof of fireproof construction for telephone exchange buildings. Mr. Florance explains as follows how his company overcame this difficulty:

"We were much concerned about this problem when we contemplated the construction of our first unattended exchange building, not only because of the cost of replacing dial equipment damaged by fire but also the time required to secure replacing equipment which even in those days amounted to months. We determined to make all of our unattended buildings as fireproof as possible and accomplished this by constructing a reinforced concrete slab ceiling over which was built a peaked roof of conventional construction. We are of the opinion that this roof could burn off completely and a fire would not damage the interior of the building. To further reduce the possibility of having the roof catch on fire, we have used asbestos shingles in each instance."

• • •

The New Jersey Bell Telephone Co. is in process of making an installation of a new wrinkle in preventive maintenance of exchange cable at Caldwell, N. J. This new system, which is now being installed at Caldwell for the first time on a large scale, is similar to the gas pressure method used for many years to spot breaks in toll cables.

Compressed air is forced into all cables from the central office and maintained at a steady pressure of about seven pounds by a compressor in the office. When the cable sheath develops an opening, the air escapes and gauges located in the central office indicate that a leak has occurred. When a faulty cable is isolated, a troubleman can then localize the break by taking pressure readings at bicycle type valves spotted at regular intervals along the cable. To make ordinary cable terminals gas-proof, hot asphalt is forced into the stub just above the terminal. It is stated that over 1,500 terminals have been treated this way in this particular exchange.

The principle of using compressed air to test telephone cable is not new. Air was used for this purpose prior to the adoption of nitrogen gas, but, due to the difficulties encountered extracting moisture from it at that time, the idea was abandoned in favor of the dry, but more expensive gas. During the late war, the Signal Corps developed a small oil-free compressor equipped with two containers of desiccant to extract moisture from the air before forcing it into the cable sheath for flash testing. This arrangement proved entirely successful during the period that the supply of cylinders for storing and transporting nitrogen gas was extremely critical.

Back in 1925, the writer examined an installation that used air for cable testing in the main office of the Shanghai Mutual Telephone Co., in Shanghai, China. This installation consisted of a compressor piped to each main cable in the central office. The air used for testing could be directed into certain cables by opening or closing certain valves.

• • •

It has been said: "To take care to bed is to sleep with a pack on your back."

• • •

Back in the younger days of telephony, most telephone directories carried the following statement: "During thunder showers, calls will not be answered."

• • •

A new type of insulation makes use of nylon on the smaller sizes of electrical wire developed for use in the wiring of homes, offices, factories and other buildings. The nylon forms a hard shell over the rubber insulation giving the conductors better protection. This new type of wire should prove useful to the telephone industry.

The wire is also 30 per cent smaller in diameter than conventional types now used. It takes up less room in the conduits which permits the use of a greater number of conductors. Under the nylon are two layers of insulation —natural rubber and neoprene synthetic rubber. The nylon is hot and liquid when applied over the rubber. As it cools, it becomes extremely hard and smooth.

The new wire is claimed to be resistant to gasoline, oil, fire, moisture, acids and light.

• • •

We have had the recent pleasure of examining several new types of cables of the plastic jacket variety. The conductors are also insulated with a plastic instead of the usual paper or textile. A metallic tape covers the conductors immediately under the outer jacket for shielding purposes.

It would appear that this rugged type of cable should have numerous uses in the average exchange for building cables, etc.

• • •

A recently developed electric impact tool should prove extremely popular in the telephone field. Following are the specifications: Length, overall — 10½ ins.; weight, less cable—6 lbs., 8 oz.; side to center — 1$\frac{13}{32}$ ins.; free speed (forward or reverse) 1900-2000 rpm.; impacts per minute—1900; size socket driver—½ inch square. The tool can be operated from 110-220 volt AC-DC (25-40-50-60 cycle).

The electric impact tool is extremely versatile, being capable of applying and removing nuts, drilling, reaming, tapping, driving and removing screws, driving and removing studs, running wire brushes, doing hole saw work, drilling brick and masonry, and driving wood augers by the use of standard attachments.

This tool though rated for ¼ inch drilling will step drills up to ½ inch diameter. Used as a power screwdriver, it handles machine screws up to ⅜ inch thread size and wood screws up to No. 20. Adapters and bits for all types of screw heads are available. It will handle wood bits up to 29-32 inches diameter. For masonry drilling,

(Please turn to page 26)

blems Permanently-

UGER TYPE 10 M-A-X

Order Strowger Type 10 M-A-X equipment today, and you can be sure that, many years from now, you'll still be proud of your choice. For exchanges as small as 50 lines, or as large as 200 lines or more, this new Strowger Automatic equipment solves your problems *once and for all.*

In designing this new switchboard, practical telephone men first chose the features most needed in modern exchange operation. We put all these features into the Type 10 M-A-X. Then, looking ahead, we put into it features that will keep it modern for years to come.

For example, in your Type 10 M-A-X you'll find provision for Verification service, and for the "Flash busy" supervision required in nationwide toll-dialing operation. The nationwide toll-dialing network may not reach your exchanges for several years — but when it does, you'll be ready for it, with your Strowger Type 10 M-A-X.

Meanwhile, too, you'll find it always ready to meet changing needs, and to grow with the community—quickly, economically, without discarding original equipment. Like all Strowger Automatic equipment, the Type 10 M-A-X is built with an eye to the future!

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems
Makers of Telephone, Signaling and Communication Apparatus . . Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions

AUTOMATIC ELECTRIC SALES CORPORATION, 1033 W. Van Buren St., Chicago 7, U. S. A.
Export Distributors: INTERNATIONAL AUTOMATIC ELECTRIC CORPORATION

it will operate carbide-tipped drills up to ⅜ inch diameter.

The power of the electric motor is converted into "rotary-impacts" which exert a more powerful turning effect than is produced by conventional tools of comparable size. The motor cannot be burned out by overloading. Even if the spindle is stalled completely, the motor continues to run. The tool is easy to hold. The operator feels no reaction — no kick — no twist — under any condition.

PLANT MAN'S QUIZ

Q. What type of wire is recommended for use in suspending cable by the spinner method in locations where corrosion is severe?

A. The new chromium nickel stainless steel wire has been proved extremely long lived and is corrosion resistant, under extreme conditions. This type of wire can be obtained from your telephone supplier.

• • •

Q. What are the advantages of splicing stub cables in manholes on a new cable system?

A. Frequently, when main cables are installed they are of greater pair capacity than is necessary for immediate requirements. The use of a stub thus makes provision for future growth.

In some manholes, there may be plans made to connect lateral cables at a later date. In these locations, a short length of cable or a stub is spliced into the main cable. Then when it is necessary to provide the increase in service, the main cable need not be opened to connect the new branch cable. The opening of a main cable splice is always to be avoided, whenever possible.

The use of a stub is often employed to splice to two lateral cables thus reducing by one the cables to be spliced into the main splice.

• • •

Q. Please furnish us with complete information concerning the markings of switchboard lamps and their designations.

A. Supervisory lamp caps on a manual switchboard are usually white, red and green. The glass used in these caps may be cloudy or clear and the lens finish may be either glossy or sanded. Transparent lamp caps are also occasionally used for supervisory purposes. Line lamp caps may be obtained with various kinds of markings. In addition to various colors, these caps may have a black dot in the center, a cross, two bars, a circle and a bar, or numbers, etc.

There is no fixed designation, to the best of our knowledge, for each service feature, but a certain type lamp cap is used to designate a certain type of service. A numeral two on a lamp cap may indicate two-party service, or a dot or a bar might be used to designate a party line. The general idea is to have a certain marking to indicate various service features and then train operators so that they will be familiar with their meaning at all times.

• • •

Q. We are considering the installation of fluorescent lighting in our telephone exchange and would be pleased to learn something with reference to the average bulb life for this type of service.

A. One authority states that the average life of a fluorescent bulb is 2,500 to 6,000 hours, or approximately three to eight times the life of an ordinary filament type incandescent bulb. Fluorescent bulbs give somewhat more light the first 100 hours, but brilliancy remains almost constant for the remainder of their life. Any unusual performance from a quality standpoint will generally develop during the first 200 to 300 hours of service.

Some fluorescent bulbs will last longer than average life; some not quite so long. A longer life will be obtained if lamps are permitted to operate continuously instead of being turned on and off frequently. Starting a lamp is equal to one hour of continuous life of the bulb. Most economic operation should be obtained on the average if lamps are operated for periods of three or four hours.

• • •

Q. Will you please explain the theory of loading telephone lines in long cables?

A. The attenuation of a circuit may be reduced by decreasing either its resistance, the capacitance, or its leakage. To reduce the resistance, a larger gauge of wire is required. To reduce capacitance, a wider spacing or separation of the wires of the circuit is required. To reduce leakage, an even higher grade of insulation than is generally used at the present time is necessary. These methods all usually increase the cost of construction considerably and are not practicable.

The one method that is both simple to use and economical is loading, which increases the inductance of a line. Increasing the inductance of a line reduces its attenuation. Loading also results in the attenuation of the line being more constant with changes in frequency so that less distortion occurs.

The most practicable method of increasing the inductance of a line is to connect inductance coils in series with each wire of the circuit at equal intervals along the line. Inductance coils used for this purpose are commonly known as "loaded lines."

While loading coils decrease the attenuation of a line over the voice frequency range, they also increase the attenuation of the higher frequencies unless the loading coils are spaced at such close intervals as to prove extremely expensive. Due to this feature, lines that are engineered to transmit a wide frequency range, such as used with carrier systems, are seldom loaded. It is more economical in this case to use repeaters to compensate for the attenuation.

• • •

Q. We have some common battery kick coils and plan to use them in connection with some repeating coils to form a phantom circuit. Do you consider this arrangement practicable?

A. This will depend upon the type of kick coils you intend to use. The coils used to connect a phantom circuit should be all of the same type or the phantom may be unbalanced and become noisy. The physical circuits should also be of good quality, free of high resistance connections, well insulated and transposed properly in order to provide a noise-free phantom circuit.

• • •

Q. We have galvanized gutters on an exchange building that are beginning to rust on the inside. What method should be used to extend their service life?

A. One plan sometimes followed is to clean them well and paint with red lead and black asphaltum paint. If the rust has not progressed to a very great extent this treatment may extend their life several years.

An accumulation of leaves in gutters often accelerates rust and corrosion. When buildings are located near trees, it is usually considered a good practice to cover all gutters with a close mesh screen cover. This will permit water from the roof to enter the gutters, but will exclude all leaves, etc.

By ROSETTA RAMSEY, Speech Instructor, Mutual Telephone Co. of Hawaii

PART II

WITH the "rush of war" subsiding, telephone companies are again placing emphasis upon the tone of service for their customers. Mutual Telephone Co. of Hawaii decided to improve this phase of its service by calling attention to the voice and manner of the operators and by offering training to enable operators to become more competent public relations representatives.

Mutual of Hawaii has three basic factors related to telephone voice transmission that are peculiar to its special location:

(1) All contact with the outside world and even between the Hawaiian Islands themselves is via radio circuits with privacy equipment that tends to change the quality of the voice.

(2) Island operators with varied language backgrounds need, in some cases, specialized voice training.

(3) Telephone personnel who are newcomers to the islands, called "malihinis" locally, must be given some training in the pronunciation and spelling of customer and island place names.

The training was organized so that all three phases could be dealt with as fully as possible.

The speech training program was introduced by a showing of "Your Tell-Tale Voice," followed by discussions among the operators led by the service assistants. Next, recordings were made of the voices of all operators by means of a recording machine with telephone attachments. These were played back and discussed by the voice instructor. In these sessions an effort was made to comment on good voice qualities and to point out possibilities for improvement.

After this initial step, which served as an indispensable index of the operators' speech problems, there was a two-week instruction period, during which each operator met with the instructor at least four times for purposes of drill. In this instruction period the following topics were considered:

(1) Understandability
  (a) Enunciation. (Vowel prolongation seemed to aid in radio transmission.)
  (b) Pronounciation. (Work with newcomers as well as island-born operators on pronunciation of local and mainland names.)

(2) Pleasantness
  (a) Voice quality, pitch and inflection.
  (b) Manner and tone of service.

This two-week instruction period was followed by two weeks for observation and drill after which a second recording of all operators' voices was made. In the great majority of cases the improvement in speech and tone of service was apparent to the chief operators and service assistants as well as to the girls themselves. The contrast between first and second recordings was also valuable to the instructor as an indication of what problems still remained to be considered.

An important aspect of this program included monitoring by the instructor, followed by individual conferences with the operators. There also were conferences with operators who were referred to the instructor as a result of observations made by service assistants or chief operators.

To show how this training is used for a prospective employe, suppose we take an operator, Leilani Campbell, from the time she appears for her first interview in the personnel department, completely through the speech training phase of her job. In considering her for a job as an operator, one of the major prerequisites is that she must have a clear, understandable and pleasant voice. From the personnel office she is sent to the chief operator for a final interview. Here special consideration is given to the applicant's voice and if its effectiveness for telephone use is questionable, a recording is made, using telephone equipment attached to the recording machine. If Leilani's voice proves acceptable, then before she begins her work as an operator, she is given initial training under a service assistant who has had specialized speech work. This training includes a recording of her voice where Leilani acts as the operator and the service assistant acts as the customer. This record is played back for the voice instructor who then talks with Leilani about the good qualities of her voice and suggests how she can improve in understandability and tone of service. Special exercises are given to her for outside practice.

After Leilani starts her work as an operator, the service assistant makes an observation of her work on the circuit. Then, a second recording of her voice is made by the speech instructor and compared with the first recording. Improvements are noted and further practice is outlined if necessary. This procedure is repeated at intervals throughout her career as an operator. All recommendations for speech improvement are followed through by the chief operator, the service assistants and the voice instructor.

If the operator needs to work for

better understandability, the following exercise is frequently recommended: Place a pencil against the nose and chin and talk so that the lips press against the pencil as the words are spoken. The purpose of this exercise is to improve the operator's speech so that the customer will have no difficulty in understanding it. Another exercise for developing clear speech is: Place a pencil between the teeth and slowly count to 10. This exercise is continued until the operator enunciates clearly without the use of the pencil. If Leilani has difficulty in learning how to use a rising inflection in the manner in which telephone operators are expected to use it, then she is instructed to use her hand or her head to motion upward at the time the rising inflection is to occur. Strangely enough, this body movement can very easily be followed by the melody of her voice.

Ordinarily a girl who has an Hawaiian language background tends to have a low pitched voice, but if that is not the case, Leilani may have to do some work to develop a lower basic pitch. If Leilani can remember that she wants to use a lower pitch while she is talking over the circuit, 50 per cent of the problem is eliminated. In addition to this, if she learns to open her mouth wider and practices short sentences in varied pitches, each day using a slightly lower one, she can gradually increase her pitch range several steps.

After a period of experience on local toll circuits, Leilani may be transferred to a trans-pacific or inter-island position. In addition to the use of the previous speech drills, some consideration may be given to creating or developing a more vibrant tone for trans-pacific circuits than is necessary for local toll lines. This vibrancy or strength of tone can be tested by putting the hand on the throat directly over the vocal chords. The degree of the vibration of the throat indicates the approximate degree of vibrancy and carrying power of the voice on the circuits.

In order to make the voice training program a part of the initial and subsequent training in the future, service assistants and an assistant chief operator were given additional training in discussion and conference groups. Topics discussed were:

(1) The basic course offered to operators and how daily follow-up could help incorporate the principles of good telephone speech into general practice.

(2) The service assistant should be an example to the operators, showing how manner and speech can be an index to the customer of a high tone of service.

Half of the L-shaped, 24-position overseas and inter-island switchboard at Mutual Telephone Co., installed during December, 1947 and early 1948.

Supervisor (at telephone), telephone operator at recording machine and MISS ROSETTA RAMSEY (right) speech instructor for Mutual Telephone Co., giving advice on diction and voice modulation.

Classroom for student operators at Mutual Telephone Co. where groups are deliberately kept small so that each has the maximum of individual instruction.

telephony's *SAFETY* bulletins

No. 7—Pencils and Paper. Pencils and paper are insignificant items used in thousands of telephone offices. Are they being used safely in your office? Check your safety schedule to determine if this important subject has been discussed fully.

by FRANK E. LEE

A CLERK in a telephone office, studying a maintenance report, unconsciously balanced a short pencil on the desk with the point in the palm of her hand. An office boy came by and, without seeing the girl's hand, dropped a box of envelopes on the desk. The weight of the box drove the pencil deep into the clerk's hand.

Imagine! Getting hurt with a pencil!

To the clerical worker, and there are lots of them in the telephone business, pencils and paper are common tools—just like screwdrivers and pliers are to the plant man.

How can a person get hurt with a pencil?

Let's take a look.

(1) CARELESS HANDLING OF PENCIL. A commonly careless act is to hold a pencil in one hand while busily sorting through papers on desk tops or in file drawers. If another person is nearby, the two waving ends of the pencil constitute a real accident hazard.

(2) DISREGARD OF PERSON USING PENCIL. A bookkeeper is working with a pencil at a desk and another person bends over the desk to ask a question or to look for a memorandum. The close proximity of the pencil in writing position represents a potential accident hazard and might cause loss of an eye.

(3) PENCIL CARRIED LOOSE IN POCKET. A pencil carried in a shirt, vest, or coat pocket should be held in place with a reliable pencil clip. A loose pencil may turn directly towards the body thus a possible puncture wound is in the making.

(4) PENCIL CARRIED IN HAND. A pencil carried carelessly in the hand with point extending forward or backward easily could cause a nearby person to be jabbed painfully. As a remedy, arrange to place pencils at strategic places in the office to eliminate the need of carrying them from place to place. If the pencil is carried, recognize the hazard and carry it with caution.

(5) PENCIL LYING ON FLOOR. Many persons have turned an ankle by stepping on a small pebble on the sidewalk. A pencil on the floor offers the same hazard. The presence of desks, chairs, and equipment frames multiplies the chances of a serious accident resulting from such a fall.

Thinking about pencils automatically leads to thoughts of paper. From a safety standpoint the two go together.

(1) CARELESS HANDLING OF PAPER. Careless handling of paper stock may permit the load to slip through the fingers. A razorlike cut on the finger may result. The better way is to be sure the paper is neatly stacked or firmly secured. Then, grasp the bundle in both hands with a firm grip.

(2) PAPER LYING ON THE FLOOR. Not only do scraps of paper lying on the floor give an impression of poor housekeeping but, also, they present a hazard to a person walking—just as a pencil on the floor does. Speaking of housekeeping, the simple expedient of placing articles and items of material where they belong will eliminate many of the hazards in telephone buildings and trucks, and on telephone property.

Yes, good housekeeping chores, like placing pencils and paper in the desk after the day's work is completed, does require a little extra time—but where safety is involved remember, you have time for safety—lots of time.

Telephone Service Sold by Round-the-Clock Vigilance

"Besides the telephone business, how many other large enterprises can you think of that stand ready, at any moment of the day or night, to give individual service to their customers?

"It is surely true that of all the conveniences that simplify and enrich the lives of millions of families, none is quite like your telephone service.

"No matter when or where you call, the men and women and the vast facilities of the world's greatest telephone system are at your service, ready to do the thing *you* ask. Each call is an individual transaction, custom-built to your specifications, made and delivered "on the spot"—usually within a matter of seconds. And all the while this is being done for you, it's being done on the same individual basis and at the same time for many thousands of others.

"There is no time when the telephone system is wholly quiet. There is always a light on a switchboard somewhere—a tiny signal that someone wants or needs to talk with someone else. And whether your call is local or long distance, whether you're dialing or calling an operator, telephone men and women are always on duty to serve you.

"It is this ever-readiness that makes your telephone service unique."—*The Telephone Hour.*

V V

>> All the world loves a lover—until he monopolizes the telephone.—The Meter.

COURTS and COMMISSIONS

Middle States of Illinois Receives Higher Rates

The Illinois Commerce Commission recently granted increased rates for 12 exchanges of the Middle States Telephone Co. of Illinois, totalling an estimated $161,000 increase in annual revenues. The company had asked for $168,152.

According to the commission, the new rates, after giving consideration to an adjustment in wage rates and to additional taxes, will result in an increase in net income of $75,087, which when added to the company's 1947 net income would give total earnings of $181,711.

The company presented two property valuation figures: Original historical cost per book—gross $3,191,244 and net $2,272,849, to which was added $195,780 for materials and supplies and cash working capital; reproduction cost new, as of September, 1947, showing a gross valuation of $5,812,627 and net $4,894,232.

The company has underway a $3,915,000 construction program, including dial conversions at Park Ridge and DesPlaines, Ill., Chicago suburbs. With this construction program the company will have an estimated gross property value of $6,504,000.

The new *net* rates granted by the Illinois commission follow:

	Park Ridge Des Plaines		Pekin, So. Pekin, No. Pekin		Savanna		Green Valley Manito		Lacon		Mt. Carroll		Havana		Thomson	
	Old	*New*	*Old*	*New*	*Old*	*New*	*Old*	*New*	*Old*	*New*	*Old*	*New*	*Old*	*New*	*Old*	*New*
Business																
One-party	$4.50	$6.50	$4.75	$6.50	$4.25	$5.25	$2.75	$3.50	$3.00	$4.00	$3.25	$4.25	$4.00	$5.00	$3.00	$4.00
Two-party	3.75	5.50	4.00	5.50	3.75	4.75	2.25	3.00	2.50	3.50	2.75	3.75	3.25	4.25	2.50	3.50
Rural	2.50	4.00	2.25	3.25	2.75	3.25	2.25	2.75	2.25	2.75	2.75	3.00	2.25	3.00	2.75	3.00
Residence																
One-party	3.00	3.75	3.25	3.75	2.75	3.25	1.75	2.25	2.25	2.75	2.50	3.00	2.50	3.00	2.25	2.50
Two-party	2.25	3.15	2.50	3.00	2.50	2.75	1.50	2.00	1.75	2.25	2.25	2.50	2.00	2.50	2.00	2.25
Four-party	1.75	2.65	2.00	2.50	2.00	2.25	1.25	1.75	1.50	2.00	1.75	2.00	1.50	2.00	1.75	2.00
Rural	2.00	2.75	2.00	2.50	2.00	2.25	2.00	2.25	2.00	2.25	2.00	2.25	2.00	2.25	2.00	2.25
Service Station..	...	...	.60	1.00	...	...	.60	1.00	.60	1.00	...	...	.60	1.00	...	...

V V

Protests Proposed Regulation Of Public Utility Advertising

A resolution protesting against the principle that the West Virginia Public Service Commission can determine how much a public utility should pay for advertising was adopted by the West Virginia Publishers' Association at its annual meeting July 31.

The publishers objected to a recommendation by the commission's chief accountant that the agency "not only determine the amount which companies coming under its jurisdiction shall expend for advertising . . . but the media in which such advertising shall be placed."

Such a practice, the resolution asserted, is "contrary to the letter and spirit of the constitutions of the United States and of the State of West Virginia, and without authority of the statute under which the public service commission was created. . . ."

V V

Liberty, Neb., Company Gets First Increase Since 1901

The Liberty (Neb.) Independent Telephone Co. has been authorized by the Nebraska State Railway Commission to increase by $1.50 its quarterly rates for all three classes of subscribers.

Those who own their sets and are stockholders were raised from $1.50 to $3.00; those who do not own stock but own their sets, from $2.25 to $3.75; and those who own neither, from $3.00 to $4.50.

This was the first increase for the company since its organization in 1901. Its rates always have been on a quarterly basis.

The new schedule of rates, it is estimated, will raise $4,233 in revenue, allowing a net profit after taxes of $1,375.

Authorizes Bond Sale, Rate Increase for Oregon Companies

The Oregon-Washington Telephone Co., Hood River, Ore., was authorized to sell $250,000 par value mortgage bonds to the Connecticut Mutual Life Insurance Co. by authorization of the Oregon Public Utilities Commission on July 29. Bearing a 3¾ per cent interest rate, the bonds must be sold before Sept. 1. The company was also granted permission to supplement its mortgage indenture.

Increased rates for business and residence telephones of the Aumsville (Ore.) Mutual Telephone Co. were also approved recently.

V V

Increase Effective Oct. 1

Higher rates for the West Branch Telephone Co., Muncie, Pa., will be effective Oct. 1, according to a recent announcement by company officials. The increases are: residence, 25 cents, business, 75 cents, and extension service, 15 cents.

V V

California Company to Sell Mortgage Bonds and Stock

The California Water & Telephone Co., Monrovia, was authorized recently by the California Public Utilities Commission to sell $1,000,000 principal amount of its first mortgage bonds, 3¼ per cent series, due 1971, and 12,800 shares of its common stock.

The transaction represents the entire system of the company, which operates in San Bernardino, San Diego, Los Angeles, Monterey, and Riverside Counties.

Minnesota Sales Approved

In recent actions the Minnesota Railroad & Warehouse Commission approved the sales of (1) certain telephone lines from the Alexandria (Minn.) Telephone Co. to the Osakis (Minn.) Telephone Co.; (2) certain telephone properties of the latter company to the Alexandria company; (3) the entire properties of the Elm Creek Telephone Co. to Clarence H. Headley.

V V

Two Michigan Independents Receive Increased Rates

The Michigan Public Service Commission on Aug. 2 authorized two Independent telephone companies — the Calhoun County Telephone Co., Homer, and the Rural Telephone Co. of Stockbridge—to increase their rates.

In its orders the commission stated that it recognized the need of increased revenues by these companies, but said the service rendered must be commensurate with rates. It ordered both companies to report to the commission not less than bi-monthly, beginning Oct. 1, concerning their plans to improve their service.

V V

Allowed to Transfer Service

Permission to transfer their service from the Central Telephone Co., Carlos, to the Alexandria (Minn.) Telephone Co. was granted to Central company subscribers recently by the Minnesota Railroad & Warehouse Commission. The commission order stated that the petitioners were located in the trade territory of Alexandria and their social and business connections were located in that city.

V V

Summary of Commission Rulings and Hearings

Florida Railroad & Public Utilities Commission

Aug. 18: Continued commission investigation of Southern Bell Telephone & Telegraph Co. practices in its Perrine exchange area.

Kansas Corporation Commission

Sept. 7: Hearing on complaint against East Kansas Telephone Co., Nortonville, by Edmund Theis *et al* charging inadequate service, increased rates, and change of system without notice to subscribers.

Sept. 13: Hearing on application of Lane (Kan.) Telephone Co. for authority to change rates.

Sept. 13: Hearings on applications of A.&P. Cooperative Telephone Co. Inc., Abbyville, for permission to transfer its franchise and to cease operating at Abbyville and Plevna; and of J. J. Gagnebin, John Wagler and Frank Connery for permission to operate a telephone company in the same territory.

Sept. 13: Hearing on application of Farmers & Citizens Telephone Co., Munden, for authority to change rates.

The LaCrosse (Wis.) Telephone Corp. may not be able to offer a record of 91 years for two employes—the nearest it has is 88—as did the Commonwealth Telephone Co. of Madison, Wis., (TELEPHONY, July 24, Flashes and Plugs column) but it does lay this one on the block as a challenge. The LaCrosse company has eight employes with a total of 293 years, not only in the same industry but *at the same exchange*. Holding down the record are: (Seated from left to right) MAME RICHMOND, chief clerk, 46 years; BLANCHE MARSH, switchboard operator, 32 years; MARCELLITE SIEGER, chief toll operator, 33 years; and SIGRIDE BRAATHEN, senior toll supervisor, 33 years. The top row, left to right: FRITZ JOHNSON, test board operator, 37 years; T. G. STREHL, commercial manager, 31 years; ARTHUR GOETTING, cable department superintendent, 42 years; and C. J. POST, maintenance and installation, 37 years.

Minnesota Railroad & Warehouse Commission

Sept. 1: Hearing on application of Sam Burton *et al* for permission to discontinue service rendered them by the Hastings (Minn.) Telephone Co. and to be served by the Northwestern Bell Telephone Co.

New York Public Service Commission

Aug. 12: Hearing on application of New England Telephone & Telegraph Co. for an increase in its capital stock.

Aug. 12: Hearing on application of Orange County Telephone Co., Middletown, for authority to issue $350,000 mortgage bonds.

Oklahoma Corporation Commission

Sept. 2: Hearing on application of Harry D. Moreland, Tulsa, for order requiring the Southwestern Bell Telephone Co. to continue serving him.

Sept. 7: Hearing on application of Wayne residents for automatic dial exchange installation by the Southwestern States Telephone Co., Brownwood, Tex.

Sept. 8: Continued hearing on application of Moore residents, requesting that the Southwestern States Telephone Co., Brownwood, Tex., be required to give adequate service.

Sept. 8: Date on which commission requires service of Bokchito (Okla.) Telephone Co. to be in good condition.

Sept. 9, 10, 21, 22, and 23: Hearing on evidence contesting application of Southwestern Bell Telephone Co. for increased intrastate exchange rates in Oklahoma.

Oct. 1: Continued hearing on application of Southwestern Bell Telephone Co., Southwestern Associated Telephone Co., Lubbock, Tex., Southwestern States Telephone Co., Brownwood, Tex., and Oklahoma Telephone Co., Broken Arrow, for continuance of rules similar to those of expired federal regulation U-2 governing order of service installation.

Oct. 1: Hearing on application involving boundary lines between territory of the Southwestern Bell Telephone Co.'s Tulsa exchange and the Oklahoma Telephone Co.'s exchange at Broken Arrow.

Wisconsin Public Service Commission

Aug. 13: Hearing on application of Marquette & Adams Telephone Co., Oxford, for authority to increase rates.

V V

Transandean Appoints Joslyn Distributor

Transandean Associates, Inc., New York City, announces the appointment of Joslyn Mfg. & Supply Co., Chicago, Ill., as distributors of the Case span and point magnesium carrier circuit transportation brackets and other magnesium pole line hardware products.

V V

>> Telephone dials are used daily by many of us, but only one person in ten can draw one accurately from memory, according to tests by Dr. Martin Scheerer of City College, New York.

A Selected List of Telephone Books

For Telephone Employes and Libraries

• ***How to Build and Repair a Farm Telephone Line*, published by Telephony Publishing Corp.**

Eight-page booklet, unbound, 25 cents per copy to non-subscribers of TELEPHONY; special prices available to subscribers and to anyone ordering 25 or more booklets. This booklet, well-illustrated with photographs and diagrams, tells what was done to place a run-down farm line in good condition to furnish excellent service. The text describes how to attach wire to an insulator, how to attach brackets, how to set a pole, how to string wire, how to make a splice, how to protect telephone line from power line hum, how tree branches touching wires hamper transmission, how to connect drop wire to line wire, how to attach drop wire to house, how to connect house line to telephone, and how to connect the ground rod. The materials needed for a farm line are also listed.

• ***Rural Telephone Trouble*, published by Telephony Publishing Corp.**

Four-page reprint of an article published in TELEPHONY giving 33 magneto telephone and line troubles most commonly encountered, with suggestions as to the most likely cause of each—whether in the telephone set, the protector, the line, or the central office. Cost is 25 cents per copy to non-subscribers of TELEPHONY; special prices available to subscribers and to anyone ordering 25 or more reprints.

• ***ABC of the Telephone*, published by Telephony Publishing Corp., 84 pages—8½ ins. x 11 ins. Prices: One copy, $1.50; two to 25 copies, $1.35 each; 26 to 50 copies, $1.20 each; 50 or more copies, each.....$1.05**

Reprint of first 21 installments of article by Frank E. Lee running currently in TELEPHONY. Covers fundamental information concerning electrical circuits, telephone transmitters and receivers, induction coils, generators, ringers, relays, line protection, dials, automatic switching, drop wire installation. Particularly beneficial to beginners.

• ***Handbook for Telephone Managers and Engineers—Vol. I.* Published by Automatic Electric Co., 1033 W. Van Buren St., Chicago, Ill. 294 pages (illustrated) $3.00**

Deals primarily with design, construction and maintenance of outside plant and also includes introductory sections containing mathematical and engineering data, formulas, tables and other material of a general nature.

• ***Telephone Handbook of Standard Outside Plant Construction Methods—Book No. I.* Published by Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago, Ill. 365 pages (illustrated).....$3.50**

Covers standard outside plant construction practices, pertaining to pole line and long span construction. Seven sections are subdivided into more than 100 parts. Subjects are cross-indexed.

• ***Fundamentals of Telephony*, by Arthur A. Albert (1943) 366 pages $3.75**

This elementary book, intended for beginning students and for telephone workers, is devoted exclusively to telephone communication. The first four chapters present briefly the principles of electricity and acoustics upon which telephone practices are based. The book then considers the following subjects: Telephone transmitters, receivers, telephone sets and circuits, telephone lines, manual telephone systems, dial telephone systems, loading, telephone measurements, noise and cross-talk, and repeaters and carriers.

• ***Electrical Fundamentals of Communication*, by Arthur L. Albert (1942); 554 pages.....$4.00**

This book deals with fundamentals of electricity as applied to communication, including telegraphy, telephony, and radio. Contains basic electric circuits and phenomena using illustrations, terminology and problems from communication industry standpoint. Contains tables and 359 excellent drawings; is non-mathematical and clearly written for communication people having little or no college training. Especially suited for use in telephone training courses for new employes. Also valuable for employes who wish to extend their knowledge of electricity. A summary as well as review questions and problems given at end of each chapter.

• ***Soldering for Workshop, Farm and Home*, by John Bonert (1941); 111 pages, 28 illustrations.....$1.25**

Valuable soldering information for telephone plant men, particularly apprentices, is presented in this book written by a telephone man with years of practical experience. The book discusses soft soldering, fluxes, tinning, soldering coppers, wire splices, soldering on lead, closing seams in a split cable sleeve, soldering and sweating with a torch, joints, hard soldering or brazing, construction of a soldering copper holder and pad, etc. No scientific terms or complications have been used in the book, which is intended to help the beginner or to refresh the memory of an experienced worker.

• ***Electrical Communication*, by Arthur L. Albert (1940); 534 pages (second edition).....$5.00**

Presentation of electrical theory of communication, including vacuum tubes, networks, filters, and discussion of entire industry. Various subjects considered as related to one another in modern communication systems. Designed as a college textbook and reference book for those having technical training. Others will find much of value in it, as use of mathematics has been limited but not at a sacrifice of engineering exactness.

• ***Transmission Networks and Wave Filters*, by T. E. Shea (1929); 470 pages.....$6.50**

A specialized book which deals with principles of transmission networks, electric wave filters, and composition of transient waves. It is intended for student engineers or graduate engineers.

• ***Radio Operating Questions and Answers*, by Nilson and Hornung, 400 pages.....$3.25**

This is a technical review book on radio communication for prospective and experienced radio operators of all classes, especially those about to take FCC license examinations. It condenses in question and answer form theory, apparatus, circuits, operation, laws, regulations, etc.—all the information covered in the new form of government examinations. Pocket size, flexible.

• ***Fundamental Electronics and Vacuum Tubes*, by Arthur L. Albert (1938) 422 pages.....$4.50**

The increasing use of vacuum tubes in telephone work makes this non-mathematical book of practical value to persons in engineering and operating branches of telephony. The book discusses the principles of electronics and the theory of vacuum tubes, photocells and copperoxide varistors in telephone circuits and radio. It delves into the theory of these devices and the design and operation of circuits in which they are used.

• ***Communication Engineering*, by W. L. Everitt (1937); 727 pages (second edition).....$5.50**

Book designed for engineers and those with technical training; gives fundamental principles of telephone, telegraph and radio communication without going back to the beginnings of the entire electrical engineering field. Transmission networks and circuits, involving coupled circuits, impedance transformations, equalizers and bridge circuits are treated. Inductive coordination is discussed with the latest theories for minimizing interference. Discussion is given of other links in the circuits which make possible radiotelephony or carrier-current systems, including vacuum tube detectors and amplifiers. Mathematical ideas, beyond calculus, are introduced just before they can be applied.

• ***Inductive Coordination of Electric Power and Communication Circuits*, by Laurence Jay Corbett (1936); 161 pages $1.75**

This excellent book discusses the nature of power transmission and of communication transmission, the effect of magnetic and electric induction and various influence factors. Susceptiveness and coupling factors, effects of conductor arrangements, transpositions in power and communication circuits and their coordination, power system wave shape, control of residual voltages and currents and many other phases are discussed. This book should contribute to a fuller understanding by power and communication engineers of each other's problems.

• ***Telephone Theory and Practice*, by Kempster B. Miller (1933); 1414 pages.....$16.50**

A set of three volumes, "Theory and Elements" (1930, 468 pages, $5.50); "Manual Switching and Substation Equipment" (1933, 439 pages, $5.50); and "Automatic Switching and Auxiliary Equipment" (1933, 494 pages, $5.50). Volumes may be purchased separately or as a set. This series replaces "American Telephone Practice" by the same author, published early in the century. The set comprises an excellent source of accurate information of entire subject of telephony.

• ***Elements of Utility Rate Determination*, by J. M. Bryant and R. R. Herrmann (1940); 464 pages.....$5.00**

Based on tested and workable methods, this book discusses factors, methods and problems of evaluating public utility property and service for rate-making. The essentials of valuation, depreciation, expense, return, etc., as factors in establishing proper rates for various utility rates are given. Citations presented from background and key cases decided by commissions and courts.

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THE OPERATOR'S CORNER

BY
MAYME WORKMAN
TRAFFIC
EDITOR

WHAT does work mean to you? Is it a livelihood, a place to spend waking hours, a stepping stone to matrimony, or, is it what work should be—an exercise of skill directed to some end or purpose? Is yours the task of completing telephone calls effectively, courteously and promptly, or just a mechanical operation of pushing a plug in here and a plug in there, taking the connection down again, with only one purpose in mind—to see the hands on the clock designate the hour when you can toss your headset in its rack and quickly hurry away.

Work is one of life's greatest blessings but, unfortunately, it is frequently unrecognized, being considered a bore or drudgery.

Whether it be great or small, the important thing is to do our work well. Good work always confers distinct benefit upon the worker. Greatness of spirit can make a little task great. Visions of power and achievements are intimations of what we can be. They summon us to larger and more earnest effort.

However well or much we have already done, we can still do better and more. Immense possibilities are before us, and the field of splendid opportunity constantly widens as we persevere in honest purpose. Attempt the great, pursue the great, and ultimately you will achieve the great.

Youngsters starting in the telephone industry today are the future supervisors, chief operators, personnel directors, employment and traffic supervisors. Not all, but a chosen few. Those chosen few will be the operators who rise to their possibilities and know that through patient and persistent effort they can surely reach their rightful place in the organization and in the world.

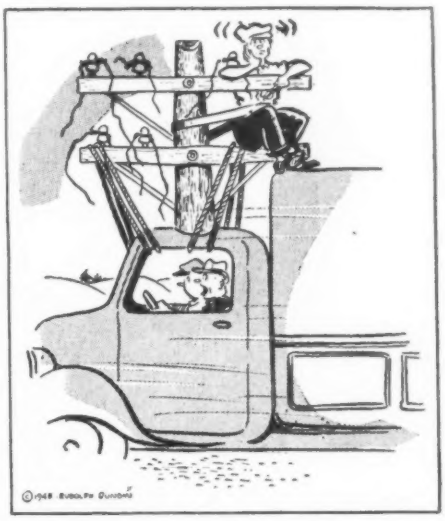
In a recent conversation with an acquaintance, she volunteered the following information. "I had a friend who was financially able to buy anything she desired. One day she said to me, 'Evelyn, I have always wanted a mink coat and a scottie dog.' And I said, 'Well, for goodness sake, why don't you buy them?' to which my friend replied, 'Oh, if I did, what would I have left to wish for?' My friend died a short time ago, and she never did buy the fur coat or the scottie dog."

There are many persons in the same position as Evelyn's friend. Having the ability to buy anything they desire, there is nothing left to wish for and, whether we appreciate it or not, the joy of possession is rarely as great as the pleasure of anticipation.

Happiness comes from within. It cannot be purchased. All the money in the world cannot buy the loyalty of a sincere friend, sympathy and understanding in time of trouble and distress. Happiness must be earned by the work we do and the kindness we sprinkle along the pathway of others as we travel through life.

Old folks know the loneliness and frustration of idleness. The feeling of having no purpose in life. "Oh, if I only had something to do!" is a desire frequently expressed.

One day an old gentleman in our neighborhood was watching a neighbor saw some limbs from a tree. After watching for awhile, he picked up the axe and started to chop up one of the limbs. When he paused for breath he was heard to remark, "I'm tired of loafing. I'm going to get myself a job!" This eighty-year old neighbor had spent most of his life on a farm and was irked by the inactivity of city life with no opportunity to do the chores he was accustomed to do. He longed for something to do, to have a purpose in life.



"I know! I know! But this was the only way we could get that beginner to quit for the day!"

(Courtesy, Edison Round Table)

In every worker's life there are trying days; days when we would like to get away from it all. But not for long, as we have no desire to join the lot of unhappy people who, having no work to do and nothing to achieve, are dissatisfied, discontented, and lonely. Work is truly a blessing in disguise.

Traffic Questions

(1) When should a local operator make a "no trunk" ticket?

(2) If an alternate telephone is specified, when are the necessary ticket entries made?

(3) If a charge is accepted at a third station, how is the "ok" entry made?

(4) When a hotel guest asks for a rate or charge on an interstate call, should he be told that the hotel operator will call him?

(5) Is the phrase "AG TX" still used?

Answers to these questions are presented on page 41.

V V

The London Telephone Book And How It Grew—to 4 Volumes

Jumbo-sized telephone books, the biggest in British history, are now being delivered to London residents. Appearing in four volumes, the new edition has 750,000 entries on its 3,294 pages and weighs 10 pounds, 10½ ounces. (That is approximately the weight of the five New York City directories, minus classified ads.)

The original British directory of 1880 had 400 names. By 1930, the cumbersome size of the single volume had caused bookbinders and subscribers so many headaches that the two-book volume emerged. Last year marked the first appearance of the four-volume version.

QUESTIONS AND TENTATIVE ANSWERS

[**EDITOR'S NOTE:** *The need to adapt to an existing industry, equipment of an entirely new kind naturally raises many new questions in the management's and engineer's mind as to the practices, procedures, etc., which are implied. In this, the early development stage of mobile telephone service as an adjunct to regular land-line telephone service, final answers, for the most part, are impracticable. It is believed, however, that tentative answers by those who have made a study of the subject, to questions which have arisen in actual experience or which might be reasonably anticipated, would be of general interest.*

With this in mind, TELEPHONY, starting with this issue, and regularly hereafter, will publish, as furnished to it by the Radio Service Committee of the United States Independent Telephone Association, questions and tentative answers pertinent to mobile telephone service. These questions and tentative answers will cover, more from an administrative than an engineering or technical standpoint, general considerations, commercial, traffic, plant, installation, maintenance, and revenue accounting aspects of mobile telephone service.]

* * *

GENERAL

(1) Can a customer rent mobile telephone equipment from the telephone company?

A. Yes, provided he also subscribes for the service.

• • •

(2) Can a customer elect to furnish his own mobile telephone equipment?

A. Yes. However, he should arrange with the supplier to install and maintain this equipment.

• • •

(3) Where a customer elects to provide his own mobile telephone equipment, what is it necessary for him to do to secure service from the telephone company?

A. Obtain a construction permit and a radio station license from the Federal Communications Commission to construct and operate the mobile radio transmitter; make the necessary arrangements for service with the telephone company; be assigned a telephone number; have equipment of suitable technical characteristics for the telephone company service including the required signaling equipment.

• • •

(4) In case the customer furnishes his own mobile telephone equipment can he purchase the selective signaling and control equipment required?

A. Yes. Some makes are now available. Others are being developed at this time.

• • •

(5) Who will make setting of the selector where the customer provides the mobile equipment?

A. Special tools are required to set the selector. It is believed that even if the selector is set when the equipment is installed by the customer that the telephone company should check the correctness of the setting. If it has not been set, it will be correctly set by the telephone company without charge. If a number change has to be made after the start of service the telephone company will reset the selector without charge.

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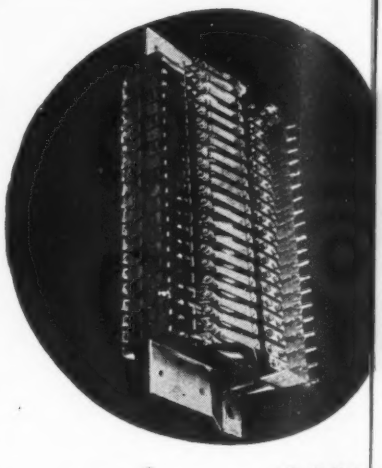

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4. Steel mounting plate for maxi
strength.
5. Unit dischargers, consisting of
carbons, separated by acetate di
tric cemented together, permane
grounds the outside line under
tinuous discharge.
6. Easily tested without removing
coil; withdrawal of test plug le
protector in operating condition.

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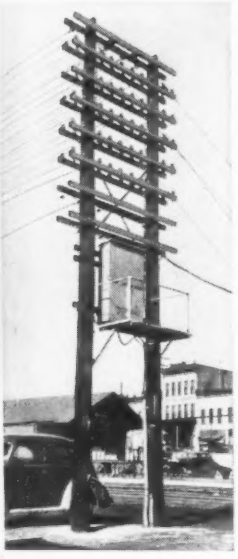

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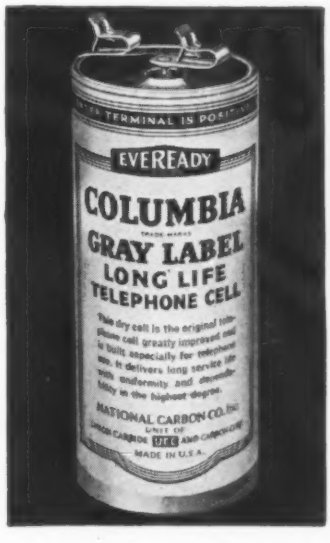

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STROMBERG Telephone CARLSON

ABC of the Telephone

(Concluded from page 19)

gized through a circuit that would include the operated (RA).

(2) When the next ringing interval starts the (R) relay again operates and the timing circuit is restored to normal.

(3) This process continues until the call is answered or abandoned.

(4) If the call is answered the timing circuit restores to normal because the (RA) relay restores to normal.

(5) However if the call is abandoned unanswered the timing relay pulls up until its contacts close to operate auxiliary timing relays and the entire circuit is restored. The dash pot type of relay can be adjusted over a wide operating range from approximately two seconds to two minutes. Therefore a wide latitude in call timing can be provided before the wipe-out feature functions.

Originating an Outgoing Call

From the preceding discussion, and through a review of *Fig. 1*, these relays operate when an outgoing call is originated:

(1) Operation of the talk key operates the (B) relay, which lights the BL lamp.

(2) Transmitter short operates the (S) relay which, in turn, operates the auxiliary supervisory relay (SA).

A greater portion of the foregoing manuscript has been devoted to a detailed analysis of a particular relay circuit. For this circuit or any relay circuit a similar careful analysis is required in order that the operating characteristics can be understood clearly.

The next question is how can the telephone repairman record all of the details necessary to recall all of these circuit details six or eight weeks or months later when a trouble report is received on this type of circuit. Obviously no one can hope to memorize all of the multitude of relay circuits with which the telephone repairman comes in contact during the course of a year. However, a little study to gain familiarity with the circuit plus the use of simple memory tools will assist the repairman to locate relay circuit faults efficiently.

Following through on the circuit used in this example the memory tools would consist of these items:

(1) The schematic drawing illustrated in *Fig. 1*.

(2) A functional list of all the relays in the circuit as follows:

(R)	Ring.
(RA)	Ringing auxiliary.
(C)	Call awaiting.
(B)	Busy (circuit in use).
(S)	Supervisory.
(SA)	Supervisory auxiliary.
(H)	Hold.
(HA)	Hold auxiliary.
(PR)	Polarized release.
CL	Call lamp.
BL	Busy lamp.

The functional list of relays is of greater importance in the more complicated circuits where these and similar designations may be used:

(PRB)	Positive return battery.
(COT)	Coin on tip.
(SGG)	Solid ground guard.

(3) An operational sequence chart. A ball and chain diagram of this circuit is shown in *Fig. 5*.

(4) Necessary wiring drawings which are copies of the blueprints from which the manufacturer assembled the circuit.

The foregoing method of relay circuit analysis has been proven good through actual use in the field. Use of these methods will assist any repairman or group of repairmen to attain a higher rate of efficiency in locating and clearing faults that may develop in relay circuit equipment.

V V

>> The first newspaper report to be transmitted by telephone was sent from Salem to Boston, Mass. in 1877.

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In the Nation's Capital

(Continued from page 21)

probably a reflection on this writer's manner of spending his time, but just as a suggestion, how about calling the new piece "crap."

• • •

As you have probably read in the papers, the FCC has called up on the carpet the radio broadcasting industry to show cause why the "giveaway" radio programs should not be barred as appealing to the greed of the masses in the nature of lotteries. The reference is to those radio programs which give away all sorts of prizes to members in the studio audience or persons not in the studio audience who are lucky enough to be called by telephone to answer some question, riddle, or whatnot.

Principal squawk seems to be coming from high priced entertainers who find their Hooper ratings nosediving because the audiences are more anxious to get a new car or washing machine or pot of cash, than they are to listen to some fat soprano singing "Trees" or a chronic asthmatic young man extolling the philosophy of "Nature Boy." It might be difficult to say offhand just how these "giveaways" are undermining the moral fiber of the nation. Your correspondent would rather have five bucks cash, any day, than listen to Frankie.

Evidently this giveaway idea is spreading—of all places—in the field of industrial relations. Recently General Motors put out a 176-page booklet to tell the world why GM employes love GM. This booklet is made up of original answers, composed by GM employes, who entered a prize contest in which they wrote letters on the subject "My Job and Why I Like It." GM gave away 40 automobiles. All told 175,000 workers or about 60 per cent of the total employe force of GM wrote letters. Some of them wrote obviously in hope of getting prizes. Some of them wrote just because they felt like writing on the subject.

The significant feature of this contest was the fact that it also brought forth a complaint from a surprising quarter. Walter Reuther, president of the United Auto Workers, opposed the contest. He felt it was an attempt to drive a wedge between the workers and the union. Be that as it may, 60 per cent of GM employes defied the union and wrote letters.

Some of the letters are interesting, some are picturesque, but none of them seem to be anti-union. Take for example Anthony Alubowicz—plant protection officer—a company cop at GM in Detroit. His age is 43 years, and he came to this country from Poland. And now he has a new automobile because he wrote: "I wish you would understand what it was like in Poland. Shoes or boots were a luxury, carried on shoulders when going to town or church, putting them on only in town or in front of the church."

Why does Tony like his job? He is able to send packages of food and clothing to his family in Poland. He has regular hours. He can take his meals in a modern company cafeteria "which furnishes good food at very reasonable prices . . . my job with General Motors could only happen here." To Tony, GM symbolizes America.

There's Ervin H. Witt. He was a professional singer. One day the doctor said: "There can be no children unless you adopt them." But orphanages didn't go for "show folks" who make their homes in wardrobe trunks. Witt got a job at GM making models. "This cre-

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ative work filled the need of my artistic nature." He now has a child. To him "GM was the angel."

One could scarcely go on without writing a free ad for GM. But the principal point is that, to these employes, GM is not a soulless corporation grinding down men for profit. To them it is a reliable employer providing good tools, good work environment. It sells their talents in the form of desirable products. That is the basis of their loyalty. Such loyalty is not necessarily incompatible with loyalty to their unions as well. But the opposition of the union to this contest shows how difficult and puzzling has become the attitude of organized labor leadership which regards any expression of employe loyalty to the employer as evidence of disloyalty to the union.

V V

General Prepares Book on Telephone Engineering

A 44-page booklet, entitled "Telephone Engineering—Project Study and Cost Analysis," has been prepared by Fred E. Norris, vice president, General Telephone Service Corp., for the use of engineers and other employes of the various telephone operating companies of the General Telephone System.

"You're wanted on the 'phone, Dear!"
(Courtesy, Indiana Telephone News)

With the large construction programs of the General companies, and the employment of many new engineers, the need developed for information discussing the economic factors incident to the provision of plant and equipment, H. V. Bozell, president of the General Telephone Corp., stated in commenting upon the booklet.

The booklet, which discusses general philosophy and develops the point that conclusions should be made after studying all facts rather than being reached through a rule of thumb, supplements other company data dealing directly with the economic design of outside plant, Mr. Bozell said.

Among the subjects covered in the booklet are: (1) Character of studies, (2) investment in plant, (3) salvage of equipment, (4) annual charges, (5) revenues and (6) the operation of money.

V V

Daubendiek Flies to Germany To Return Group of D.P.'s

W. H. Daubendiek, West Bend, Iowa, associated with the Independent telephone industry in Iowa and Nebraska for more than 50 years, has flown to Germany in the hope of returning 20 or 25 displaced persons.

Mr. Daubendiek, who will be 80 in November, was one of the first to get the opportunity to go to Germany to bring back displaced persons, it is said.

Mr. Daubendiek's original plan was to go direct to Berlin. But when he took off from New York he planned to go to Frankfurt first. He shipped food ahead of him to meet occupation force requirements. Five packages of staple foods preceded him and he took one package with him.

The permit under which he flew to Germany authorizes him to spend 30 days there. If he finds it difficult to complete his mission in that time, he plans to ask an extension.

Mr. Daubendiek has a cousin in a French prison camp, and another relative in a Russian prison camp. He was born in Westfalen, Germany, and still has a number of relatives there. He plans to visit the displaced persons camp in Westfalen first.

Mr. Daubendiek crossed the Atlantic seven times before, but this was the first time by air. He landed in Ireland and began making his way toward Germany.

He started in the telephone business at DeWitt, Neb., and transferred to Iowa in 1916.

V V

Buckley on Atomic Energy Committee

Dr. Oliver E. Buckley, president, Bell Telephone Laboratories, has been appointed by President Truman to a six-year term as member of the general advisory committee of the Atomic Energy Commission.

The appointment was effective Aug. 1.

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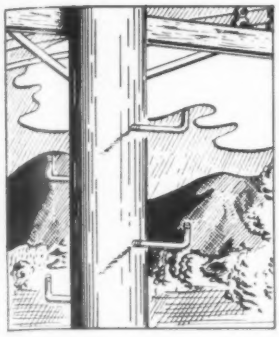

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The recent meeting of the David Laird (Florida) Chapter, Telephone Pioneers of America, at Fort Meyers, Fla., was not all business as evidenced by the above picture. Time out was taken for "a little fishing" and JUDGE E. B. EMERY, Ocala, Fla., general manager of the Florida Telephone Corp., is shown with the 70-pound tarpon which he caught during the pioneer meeting. TOM L. DYSARD, JR., Statesville, N. C., Independent telephone contractor caught the largest silver king, estimated to weigh between 135 and 150 pounds. They received Edison tarpon medals for their catches.

Illinois Association Arranges Accounting Service

Resignation of George Annan as accountant of the Illinois Telephone Association, effective Aug. 1, has been announced by J. G. Hardy, secretary of the association. Mr. Annan was appointed to assist the small Illinois telephone companies in their accounting on Apr. 1, 1947 and has served the association since that time.

At the same time Mr. Hardy announced that the directors of the Illinois association have completed arrangements with Shumway Byrd & Co., certified public accountants of Springfield and Chicago, Ill., to assist member companies, particularly the small ones, in all matters pertaining to accounting and taxes. The arrangements were completed following a study made by the accounting committee of the association.

Mr. Hardy states that the costs for the service will be "as reasonable as possible and information concerning them may be secured by writing to the accounting firm."

V V

Stalling Chosen President

Paul Stalling has been chosen president of the Farmers Mutual Telephone Co., of Barnard, Mo., succeeding Everett Davis.

SOUND ADVICE FROM A COMMISSIONER

"The public demands, and should receive, good service. It is essential for the public's best interest. But good service cannot be maintained when the rates are unreasonably low. An insufficient rate of return to a utility necessarily means a lessening of the service being rendered to those it serves. . . . A utility should not be expected to maintain a high grade of service unless it is receiving a fair return on its investment." — H. Lester Hooker, commissioner, Virginia State Corporation Commission.

Macaulay, Brace, Appointed To Bell of Canada Board

R. C. Macaulay, executive vice-president, and J. H. Brace, vice-president, have been appointed to the Board of Directors of The Bell Telephone Co. of Canada.

Mr. Macaulay was appointed a director and member of the executive committee to succeed Paul A. McFarlane, retired. Mr. Brace, vice-president in charge of personnel and public relations, succeeds William H. Harrison, New York, as a member of the board. Mr. Macaulay was appointed executive vice-president of the Bell company last March, after being assistant vice-president, engineering, and vice-president, engineering, for 18 years. Mr. Macaulay joined the company as a traffic supervisor at Montreal in May, 1913.

Answers to Questions on Page 33

(1) A "no trunk" ticket should be made as soon as the operator has tested all trunks in a ringdown, intercepting, long distance, trouble or information group.

(2) These entries are made if the call is completed or a delay is encountered.

(3) The "ok" is separated from the telephone number by a dash.

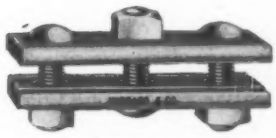
(4) The hotel guest should always be told that the hotel operator will call him regardless of whether the call is interstate or intrastate.

(5) The phrase "AG TX" is no longer used. It has been superseded by the phrase, "TX has not answered."

JOHN LINEMAN OFFERS..

The Hubbard GRIP of SECURITY

Cutaway view shows the increased contact area between clamp and strand which is afforded by Hubbard Parallel Groove Guy Clamps.



†No. 7461

The Hubbard No. 7461 Guy Clamp, with the straight, parallel groove principle, affords a uniform, non-buckling clamping area in contact with the strand. Special, high carbon, oval neck clamp bolts hold securely while tightening and resist stripping or elongation. Groove ends are slightly belled to prevent any possibility of the clamp cutting into the strand. Hubbard parallel groove Guy Clamps are made in light, medium and heavy styles; each accommodating a variety of strand sizes and each gripping the strand with the Hubbard Grip of Security.

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POLE STEPS ○ STUBBING BANDS ○ STRAIN PLATES ○ CABLE SHIELDS
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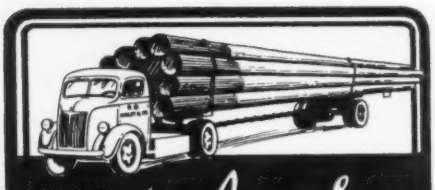

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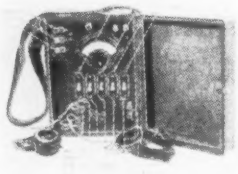

FOR SIGNALING AND MAKING VOLTMETER OR RINGING TESTS FOR OPENS, SHORTS, CROSSES OR GROUNDS. TESTING CIRCUIT CONTAINED IN THE SET PERMITS MEASURING OF d-c VOLTAGES UP TO 50 VOLTS AND OF RESISTANCES FROM 22 OHMS UP TO 2 MEGOHMS. MADE FOR THE SIGNAL CORPS BY THE CONNECTICUT TELEPHONE & ELECTRIC CORP. AT A COST OF $120.00.

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The Long Call

When the New York Central Railroad Co.'s new Twentieth Century Limiteds go into service this summer, passengers will have at their call the nation's longest stretch of train radio-telephone service, along the 463 miles between New York and Buffalo. The price will range from a minimum of 30 cents in the local area to the regular rate for other calls.

Hollywood Uses Wire Recorder From Set To Swimming Pool

One of the communications industry's latest products, the wire recorder, has firmly established itself in Hollywood. Practically everyone in filmland's colorful capital, from producer, writer, director, to the leading lady, has one. The small hand microphone and wire spools that record sound are hidden under dining tables, behind gold-plated cuspidors, in powder rooms, and beside swimming pools.

Uses are as varied as locations. Many producers record every office telephone call. One actress customer reported to a recorder company that a dinner conversation, for some reason, doubles the guests in hysterics when played back later. One actor even caches his microphone under the front steps, thereby catching guests who wish aloud they had stayed at home as they ring the doorbell. Agents and, unfortunately, bookmakers also find this gadget useful.

Among the folk, however, who staunchly claim they buy recorders for business reasons are Hoagy Carmichael, who composes songs on his. Sonny Tufts and June Haver rehearse lines; Eddie Cantor and Burns & Allen record their radio shows. Esther Williams dictated her recent book on swimming to her recorder. While Maria Montez brushes up on her French, Peggy Cummins tries to soften her English accent. Wally Beery records animal noises at his Wyoming ranch, and Robert Taylor preserves his own cello solos.

Proofs of the instrument's versatility are literally endless. Starlets at Warner Brothers Studio are tested on a wire recorder. A New York author "writes" his Hollywood pals on wire. One school teacher even "lectures" via his recorder, doing other work at the same time.

Sad is the tale of one writer who had a secretary type a story he spent three days recording. She took the machine home to work at night. Her young brother, fascinated by the sound of his own voice, recorded a lengthy conversation over the writer's creation. Thereafter, the journalist reverted to his old-fashioned, but trustworthy, typewriter.

V V

OBITUARIES

MRS. BLANCHE ALLEN, 70, operator for the Central Nebraska Telephone Co., Stapleton, and for the Tryon (Neb.) Telephone Co. for the past 25 years, died at her home in Tryon on July 23.

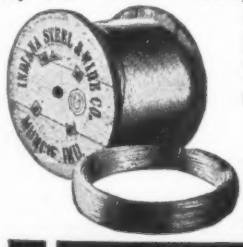
• • •

JAMES E. EVITT, SR., founder of the Ringgold (Ga.) Telephone Co., died July 31. Mr. Evitt organized the Ringgold company in 1912 which he operated with his son, James, Jr., until his death.

In addition to that, Mr. Evitt was active in business and civic affairs of his town and county. He owned and operated a general mercantile business and a drug store. He also served as clerk of Catoosa County Superior Court from 1912 to 1920 and from 1932 to 1944 and was a member of the Ringgold city council for many years as well as a director of the local bank.

He is survived by his widow and son, James, Jr.

ALL the strength and durability inherent in steel are combined—with definite economies—in Crapo Galvanized Steel Strand. Heavy, ductile, tightly-bonded zinc coatings, applied by the famous Crapo Galvanizing Process, provide lasting protection against corrosion.



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Plagge Named President Of Export Managers' Club

E. W. Plagge, division sales manager for Latin America, International Automatic Electric Corp., was recently elected president of the Export Managers' Club of Chicago, an organization of about 500 members active in export trade.

E. W. PLAGGE

Mr. Plagge has been in the employ of the Automatic Electric group for more than 27 years. A graduate of Iowa State College (B.S. '20), he took the company's training course in that year and for some time afterwards engaged in automatic telephone installation work. On his return to Chicago he was assigned to the domestic sales organization, and shortly afterwards joined the staff of the export sales company. He has since been increasingly active in the promotion of Automatic Electric's export business, and is a keen student of export trade in the communication equipment field.

Operator's Prayer

O Lord, for all I've done today,
to cause annoyance and delay,
To make a person snort and rave,
for all wrong numbers that I gave, and gave, and gave when I'd be crying, for five, three, seven three seven niyun.
For all the needless irritations,
When I'd cut off a conversation—The cusses call for information.
Because of me the slaps and slams. The smashed receivers durns and damns,
I've caused this day—O Lord, for these and all my sins,
"Excuse it please."—*Tele News*

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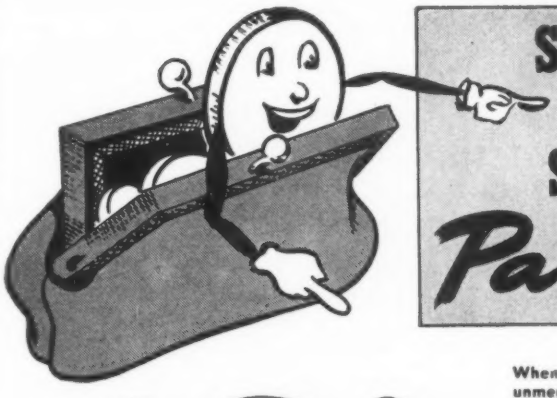

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As insurance against the next bad storms, check all guy and conductor tensions with Dillon Dynamometers. It isn't necessary to cut the wire. Above all, string all new wires the safe, scientific way.

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GE Has New Line of Oil Immersed Rectifiers

Wider use of all rectifier equipment has been made possible through the introduction by the General Electric Co. of a new line of oil-immersed selenium rectifier stacks, it has been announced by J. J. Lengyel, manager of the GE tungar and metallic rectifier division.

Isolation from dampness and corrosive vapors, greater short-time overload due to increased thermal storage, protection from physical damage while in storage or during assembly and large selection of ratings are features of the rectifiers, the company states.

The oil acts as an effective cooling medium, Mr. Lengyel said, and the container, which has a protective coating, resists the effects of moisture, fungus, salt air and other corrosive vapors.

Insulated solder lugs on one end of the rectifier provide easy, quick soldering connections. Brackets are available for mounting of the units.

V V

Elected Member of CIA

Harvey O. Edson, assistant treasurer-assistant secretary, of the Kellogg Switchboard & Supply Co., Chicago, has been elected to membership in the Controllers Institute of America. The top financial executives of 3,172 leading American companies in every branch of industry are members of the Institute which was founded in 1931.

POLES

B. J. Carney & Co., 100 N. 7th St., Minneapolis, Minn.—Western red cedar poles. Pentrex Butt Treated or Plain.

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C. M. Christiansen Co., Phelps, Wis.—Northern White Cedar Poles, plain or butt treated.

Forest Products Treating Co., 824 Pittock Block, Portland, Ore.—Douglas Fir and Lodgepole Pine Poles Pressure Treated at Laramie, Wyo., and The Dalles, Ore.

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